UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/806,852	06/18/2001	Tatsuro Nagahara	4417	7833

10

7590 08/20/2003

Anderson Kill & Olick
1251 Avenue of the Americas
New York, NY 10020-1182

EXAMINER
LEE, SIN J

ART UNIT	PAPER NUMBER
1752	

DATE MAILED: 08/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No. 09/806,852	Applicant(s) NAGAHARA ET AL.	
	Examiner Sin J Lee	Art Unit 1752	

-- The MAILING DATE f this communication appears n the cover sheet with the correspondence address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-27* is/are rejected.

7)☒ Claim(s) *28 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicants canceled claims 1-22.

Claim Rejections - 35 USC § 112

2. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 24, applicants recite "said polysilazane is a polyorganosiloxazane having . . ." However, according to present specification, polyorganosiloxazane claimed in present claim 24 is a polysilazane *modification product*, not polysilazane itself. Therefore, present claim language of claim 24 renders the scope of the claim indefinite. For the purpose of examining the claim on the merit, the Examiner assumed that applicants meant to say "said modification product is a polyorganosiloxazane having . . ."

3. Claims 26 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 26, applicants recite "said *photoacid generator* further *contains* an sensitizing dye". However, according to present specification (pg.16, lines 13-31), the photoacid generator and the sensitizing dye are two separate, independent components

that are added to the present photosensitive composition. Therefore, the present language of claim 26 renders the scope of the claim indefinite. For the purpose of examining the claim on the merit, the Examiner assumed that applicants meant to say " said photosensitive polysilazane composition further contains an sensitizing dye" based on the reading of original claim 8.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Claim Rejections - 35 USC § 102

5. Claims 23, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Urano et al (JP 62-222246A, DERWENT English abstract, and English translation provided by USPTO).

Urano et al teach (see DERWENT English abstract) a photosensitive composition comprising a compound which generates acid by exposure to light and a polymer containing Si-N bond in the principal chain. Among the examples for the polymer containing Si-N bond shown on pg.11 of English translation, both the sixth and seventh examples (i.e., No. 6 and No.7 polymer compounds) teach present formula (I) of claim 23 because in the present formula R^1 and R^2 both can be methyl groups and R^3 can either be a hydrogen atom or a methyl group. Also, in their Practical Example 4 (see Table 1 on pg.23 of English translation), Urano actually uses poly(1,1-dimethylsilazane) (Mw of 2,100) which is the No.6 polymer compound shown on pg.11. Therefore, the prior art teaches present polysilazane having the molecular weight of between 100-50,000 that contains the skeleton of the formula (I) of claim 23.
Also, as one of only several examples for the acid-generating compound, Urano teaches (see pg.8, lines 3-12) etherified product of naphthoquinoen-1,2-diazide-4-sulfonic acid chloride, which is one of presently claimed photoacid generators in claim 23. Since there are only several example to choose from, it is the Examiner's position that one of ordinary skill in the art would immediately envisage using the etherified product of naphthoquinoen-1,2-diazide-4-sulfonic acid chloride as Urano's acid generating compound. Therefore, Urano teaches present photosensitive polysilazane composition of claim 23.

Urano teaches (gp.17 and 18 of English translation) that in order to form a positive relief imaged lithographic plate, their photosensitive composition solution is

coated onto a plate to form a film, and the film is exposed to light source such as carbon arc lamp through a transparent film, and then the exposed film is then developed with alkaline aqueous solution. Only the unexposed section will remain on the surface of the plate and a positive relief image is formed. Urano does not explicitly disclose that their exposed, developed film is allowed to stand in an ambient atmosphere. However, after Urano's positive relief image is formed and before the actual printing is performed, there certainly will be a period where the imaged plate would stand in an ambient atmosphere, and it is the Examiner's position that Urano's printing plate will inherently be converted to a silica-based ceramic coating in that period as presently cited (present claim language states that by allowing the patterned film to stand in an ambient atmosphere, the film will be converted to a silica-based ceramic coating). Therefore, it is the Examiner's position that Urano teaches present method of forming a patterned insulating film of claim 23.

With respect to present claim 25, the claim language does not require a peroxide to be the present photoacid generator. It only requires that if the photoacid generator of claim 23 happens to be a peroxide, then the peroxide should be chosen from the list of compounds of claim 25. Therefore, Urano still teaches present invention of claim 25.

With respect to claim 26, Urano teaches (pg.14 of English translation) that his photosensitive composition can contain xanthene dyes in order to enhance the acid-producing effect. Therefore, the prior art teaches present invention of claim 26.

All wabl Subj ct Matter

6. Claims 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims since Urano et al do not teach or suggest the use of presently required oxidation catalyst.

Response to Arguments

7. Applicants appear to be arguing that since Urano does not teach present peroxide as a photoacid generator and present polysilazane of the formula (II), the prior art does not teach present invention of claim 23. However, present claim language of claim 23 does not require a peroxide to be present photoacid generator. Present photoacid generator can also be a naphthoquinone diazidosulfonate ester, and as already explained above, Urano teaches the naphthoquinone diazidosulfonate ester. Also, present claim language of claim 23 does not limit the present polysilazane only to the polysilazane of formula (II). Present polysilazane can also be the polysilazane of the formula (I), and as established above, Urano teaches present polysilazane of the formula (I).

Applicants also argue that Urano does not teach present method of making a patterned insulating film because the prior art is silent about allowing the patterned polysilazane film to stand in an ambient atmosphere or baking the same to convert it to silica-based ceramic coating. However, as explained above, it is the Examiner's position that Urano's printing plate will inherently be converted to a silica-based ceramic

coating as presently cited because after Urano's positive relief image is formed and before the actual printing is performed, there certainly will be a period where the imaged plate would stand in an ambient atmosphere and present claim language states that by allowing the patterned film to stand in an ambient atmosphere, the film will be converted to a silica-based ceramic coating.

Based on the reasons stated above, present rejections still stand.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is (703) 305-0504. The examiner can normally be reached on Monday-Friday from 8:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Janet Baxter, can be reached on (703) 308-2303. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 for after final responses or (703) 872-9310 for before final responses.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0661.

S. Lee
8/11/03

JANET BAXTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700